2016 ENERGY BANKING SECTOR: YEAR IN REVIEW

IPAA / TIPRO

Mike Lister
Managing Director & Energy Corporate Banking Group Head

J.P.Morgan

Agenda

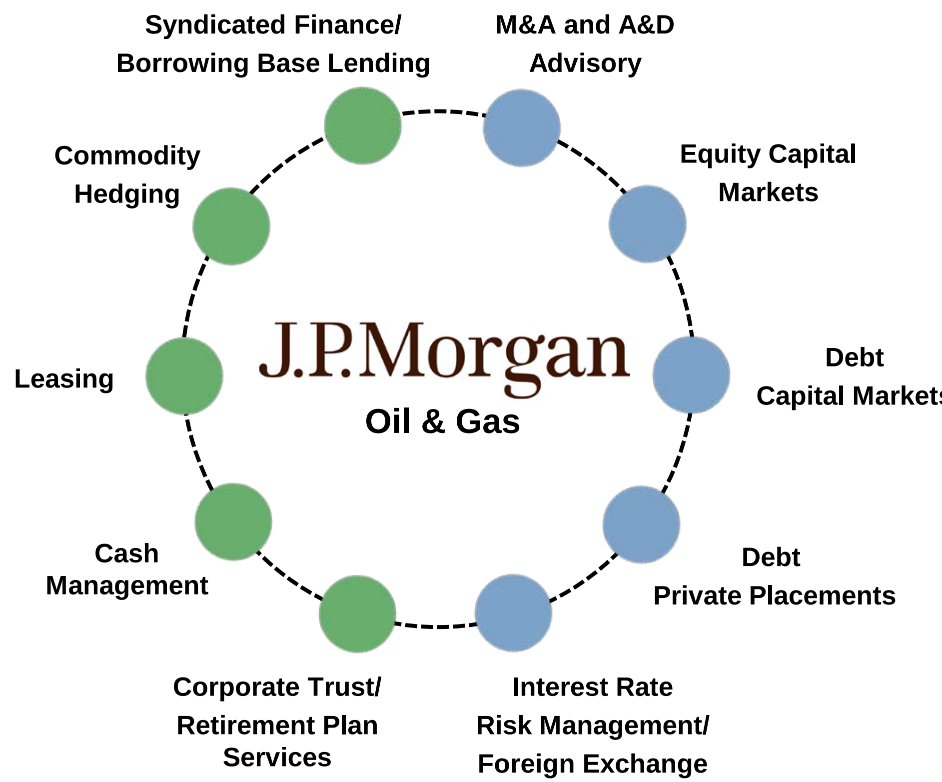
J.P. Morgan's extensive North American coverage model supporting the energy sector

Corporate Banking

- Significant client coverage and capital deployed to the energy sector
- One of the largest credit underwriting and engineering teams
- Extensive expertise in North American reserves
- Research, Lending, Equity, and Debt Underwriting – all energy focused
- Diverse client base enables JPM to distribute industry-leading research
- #1 Overall Cash Management Provider (2011-15)

Investment Banking

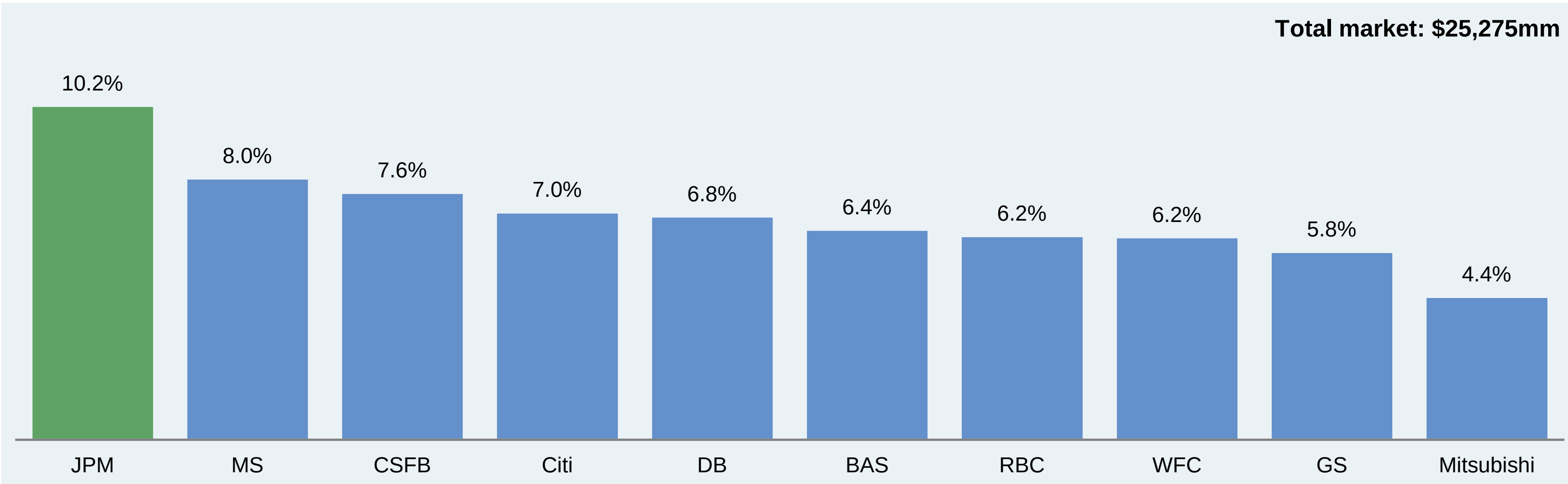
- Global financial institution uniquely positioned to assist O&G clients
- Extensive relationships with corporations, governments and other investors
- #2 bookrunner in global and U.S. equity for last 7 years
- #1 in U.S. E&P equity and equity-linked league table 2006 – YTD 2016
- #1 in global high yield bonds nine years in a row: 2005 – 2015
- #1 in E&P sector for high yield bonds each year from 2006 – 2015
- #1 in syndicated loans for 23 years
- #1 in high grade bonds: 2014 – YTD 2016
- Industry leader in commodity derivatives



Source: Dealogic

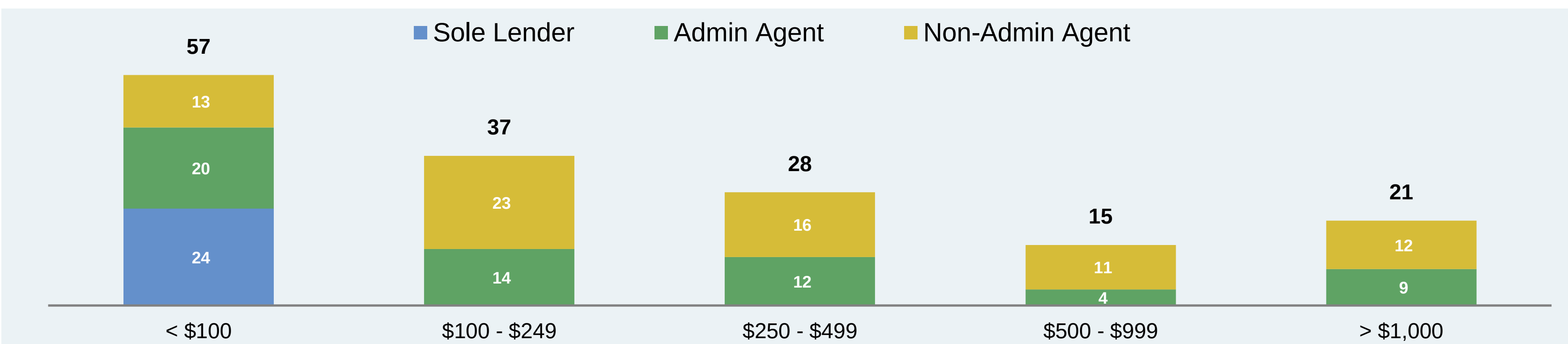
J.P. Morgan remains a financing leader in the E&P industry

U.S. oil & gas high yield bookrunner: 2016YTD ($ millions)[1]



8	**3**	**7**	**3**	**3**	**6**	**1**	**3**	**2**	**0**
Number of Lead-Left Deals									

Range of reserve-based facility sizes ($ in millions)[2]

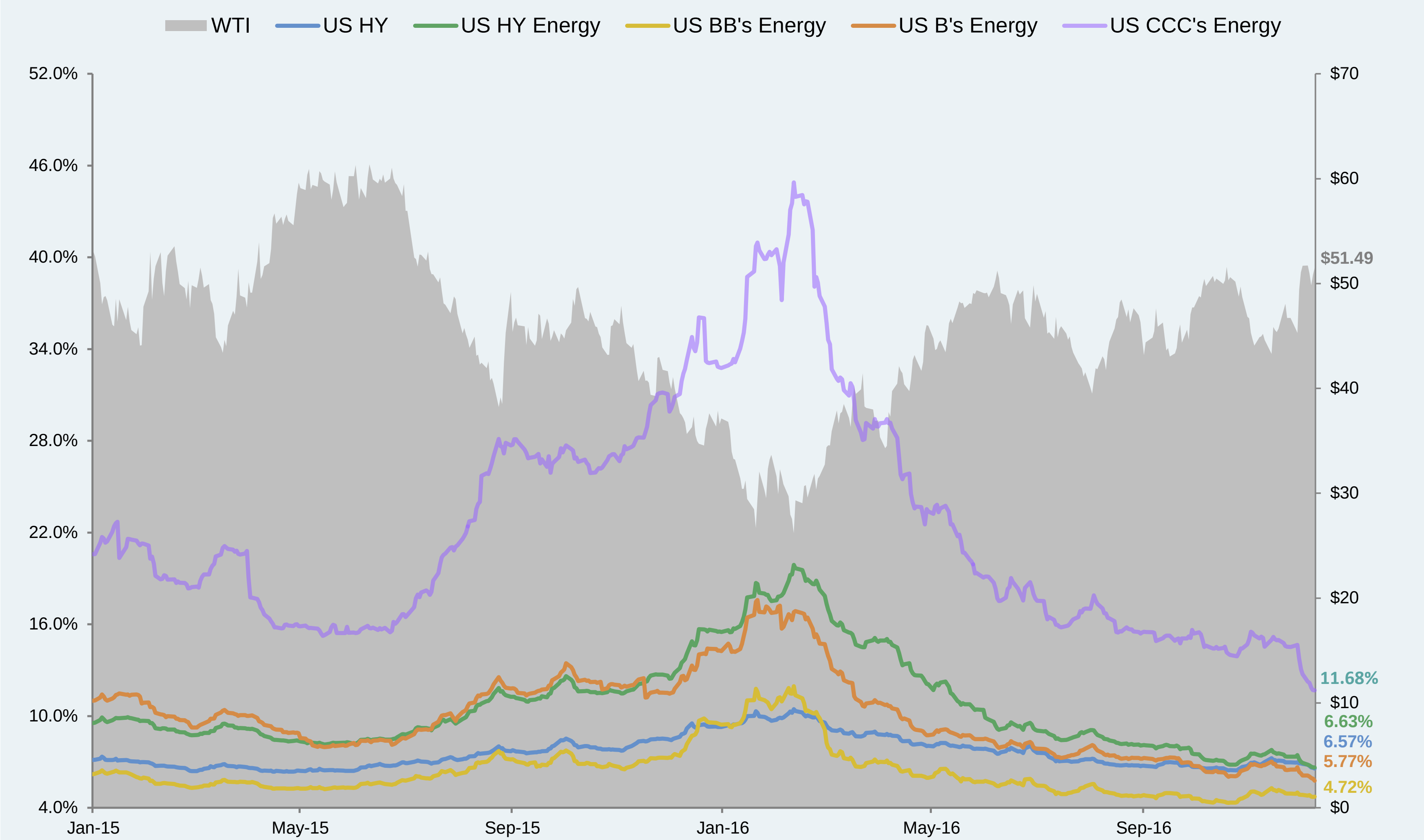


[1] J.P. Morgan as of 12/12/16, Equal split for bookrunners
[2] J.P. Morgan as of 12/1/16

Agenda

U.S. high yield energy trading performance (2015 – 2016 YTD)

Selected U.S. high yield energy indices (YTW%)

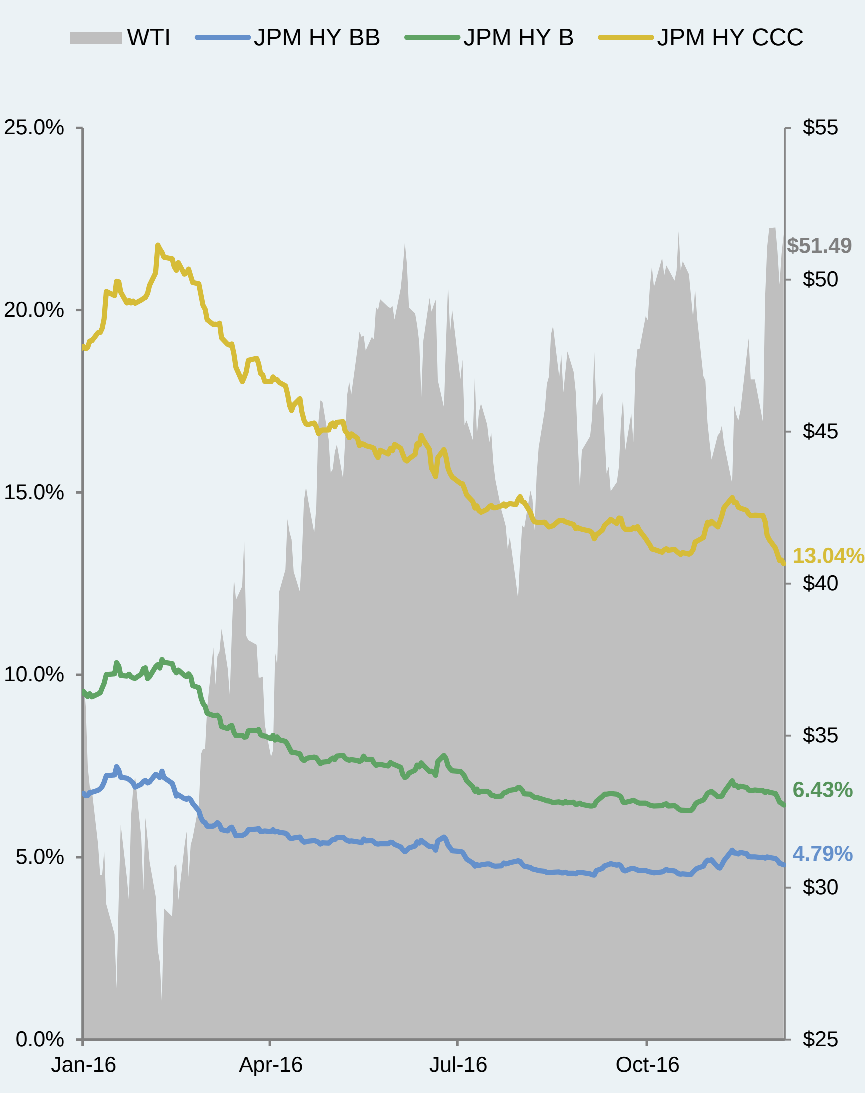


Source: Morgan Markets

J.P.Morgan

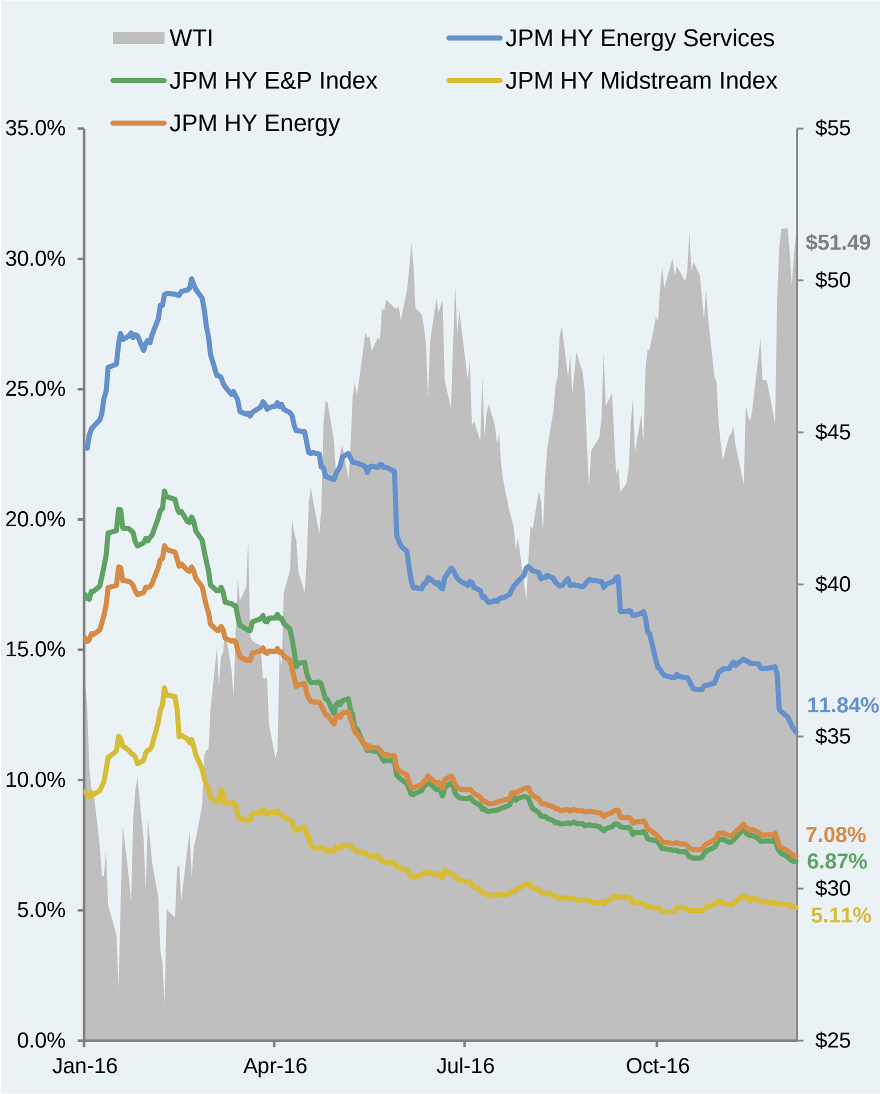
Energy, BB, B, and CCC rated bonds' YTD performance

Selected high yield BB , B and CCC indices (YTW%)



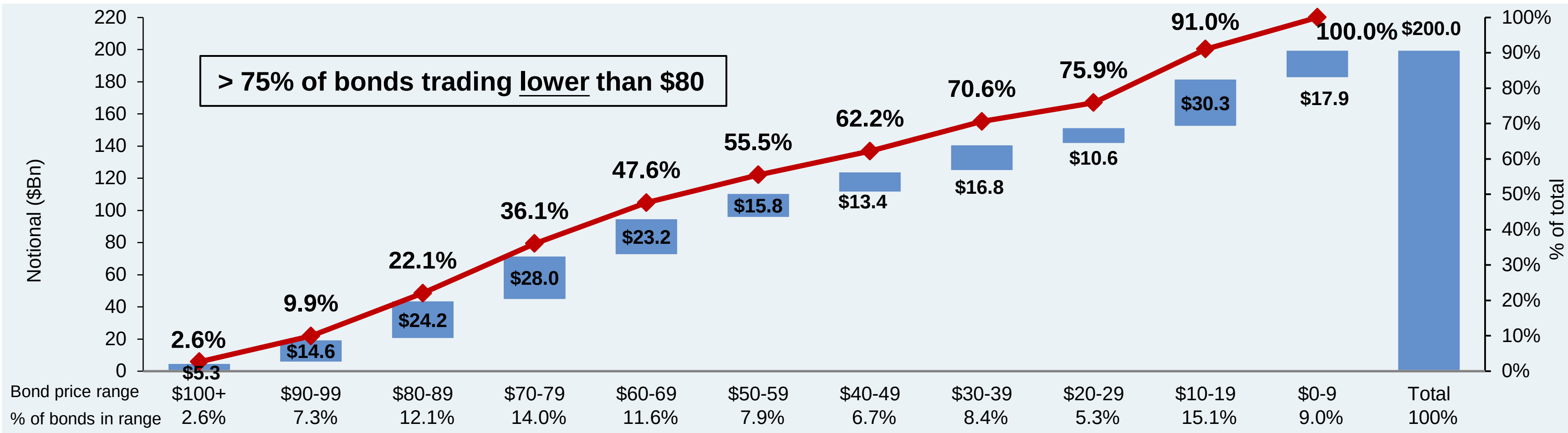
Source: Morgan Markets

Selected global high yield energy indices (YTW%)

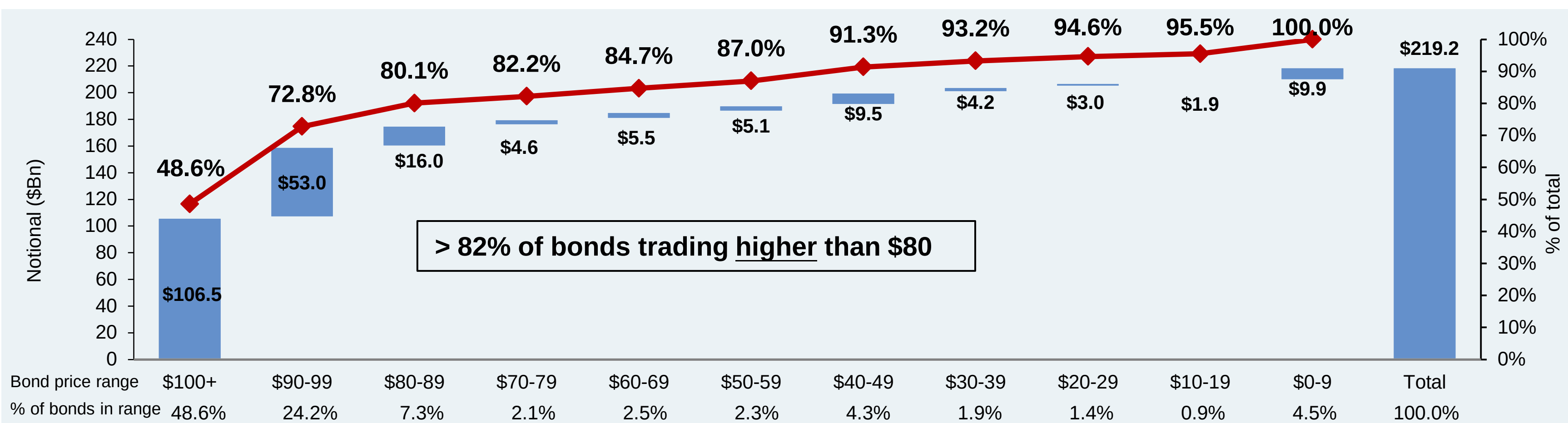


Global HY energy trading levels – an unexpected rebound

February 11, 2016



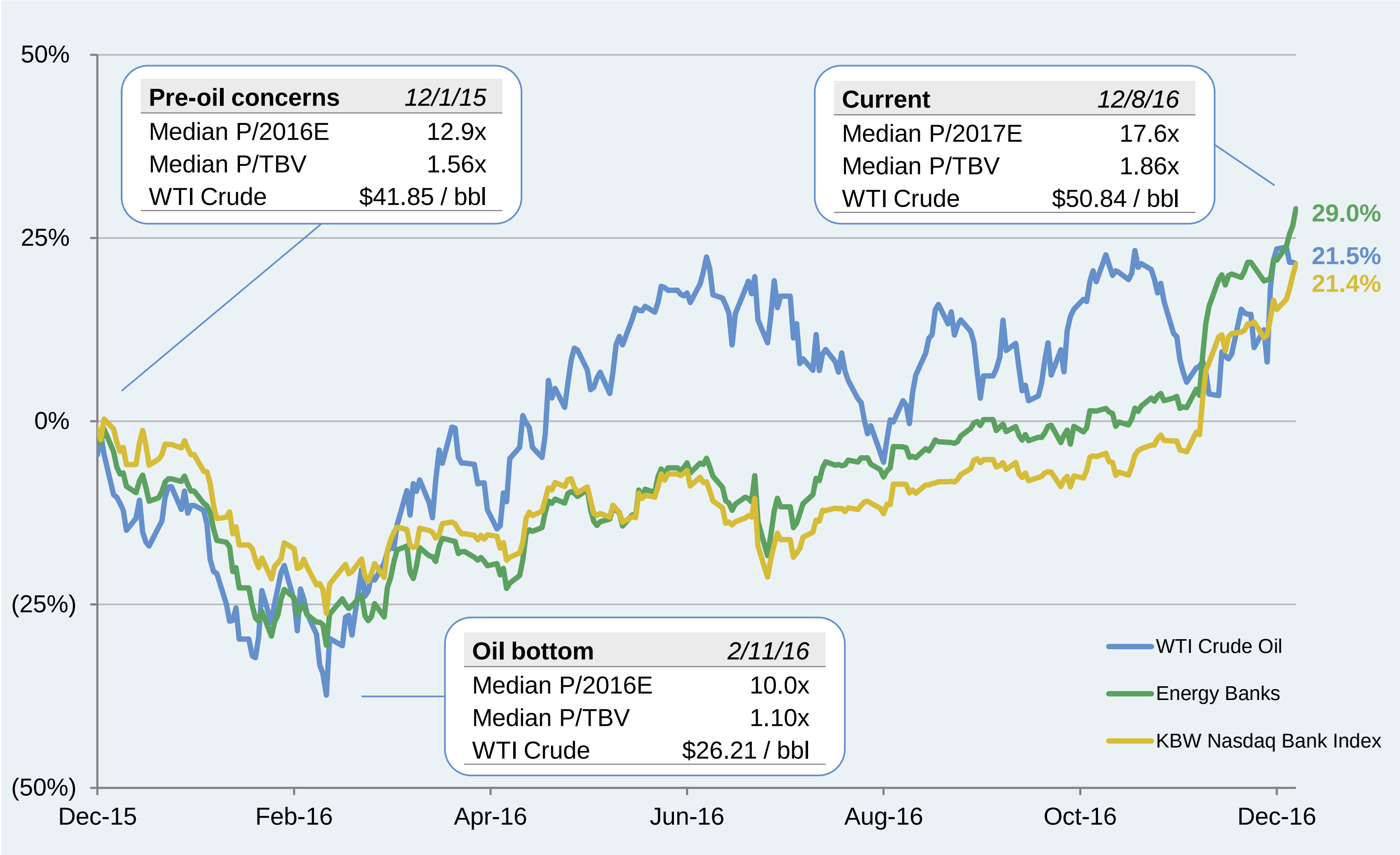
December 12, 2016



Note: J.P. Morgan HY Energy index includes E&P HY Index, Midstream HY Index, Energy Services HY Index, Propane HY Index, and Refining HY Index

Strong correlation between oil and energy bank stock prices

Equities performance since December 2015

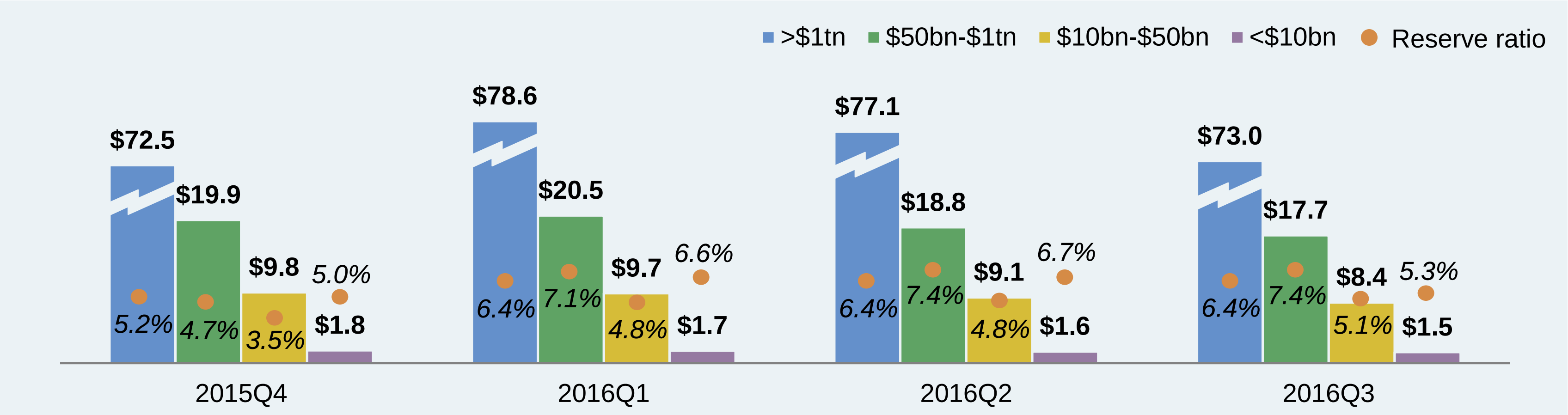


Source: FactSet, SNL Financial; Market data as of 12/8/16

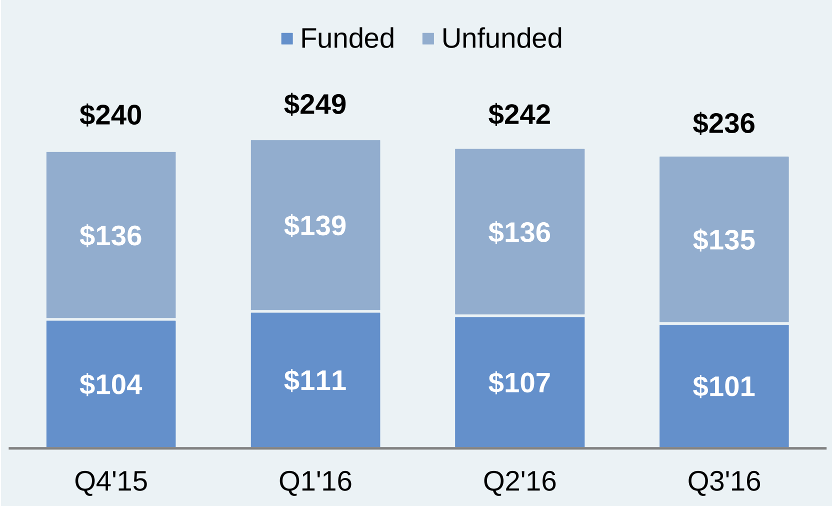
Note: Energy banks include all banks with funded energy commitments >1% of gross loans during at least one quarter since December 31, 2015, namely, ASB, BAC, BBT, BOKF, C, CFR, CIT, CMA, FFIN, FIBK, FITB, FNBC, GNBC, HBCP, HBHC, HTH, IBKC, IBTX, JPM, KEY, LTXB, MSL, NBHC, PB, PNC, RF, SBSI, STI, TCBI, TRMK, WFC and ZION

Bank energy portfolios stabilizing since Q1 2016

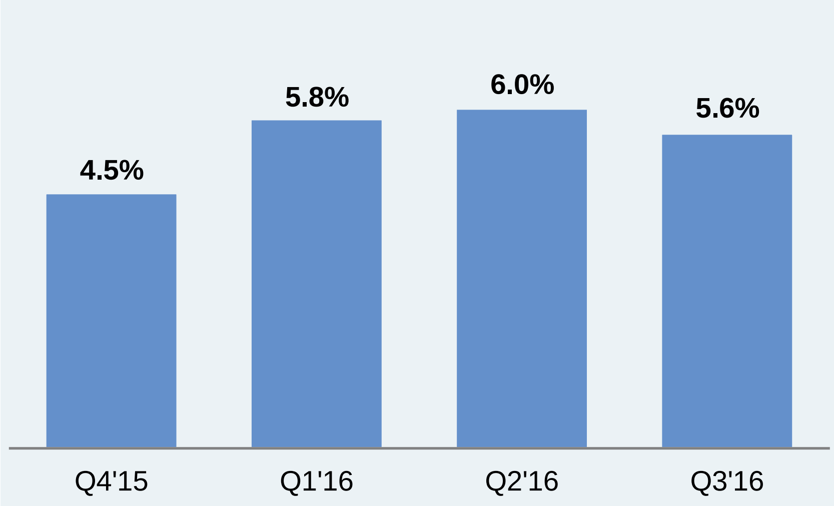
Aggregate energy outstandings ($bn) and energy reserves (%) over time, by asset class



Aggregate exposure ($bn)



Median energy reserves (%)



Source: SNL Financial, FactSet, Company disclosures; Financial data as of September 30, 2016
Note: Energy banks include all banks with funded energy commitments >1% of gross loans during at least one quarter since December 31, 2015, namely, ASB, BAC, BBT, BOKF, C, CFR, CIT, CMA, FFIN, FIBK, FITB, FNBC, GNBC, HBCP, HBHC, HTH, IBKC, IBTX, JPM, KEY, LTXB, MSL, NBHC, PB, PNC, RF, SBSI, STI, TCBI, TRMK, WFC and ZION

High yield defaults & distressed exchanges by industry

Summary[1]

OFS Bankruptcies

- **109 OFS bankruptcies since 2015**
  - 2015: 39
  - YTD 2016: 70

E&P Bankruptcies

- **105 E&P bankruptcies since 2015**
  - 2015: 44
  - YTD 2016: 61

2015 default and distressed exchanges by industry

Industry	Amt affected ($mn)		No. of actions	
Automotive	0	0.0%	0	0.0%
Chemicals	0	0.0%	0	0.0%
Consumer	968	2.0%	3	5.1%
Diversified	3,249	6.8%	4	6.8%
Energy	**23,235**	**48.7%**	**33**	**55.9%**
Financial	0	0.0%	0	0.0%
Food and Beverages	211	0.4%	1	1.7%
Gaming Lodging	150	0.3%	1	1.7%
Healthcare	2,105	4.4%	2	3.4%
Housing	0	0.0%	0	0.0%
Industrials	250	0.5%	1	1.7%
Metals and Mining	2,101	4.4%	3	5.1%
Metals and Mining (Coal)	12,241	25.6%	6	10.2%
Paper and Packaging	0	0.0%	0	0.0%
Retail	575	1.2%	1	1.7%
Services	2,500	5.2%	3	5.1%
Technology	140	0.3%	1	1.7%
Telecommunications	0	0.0%	0	0.0%
Transportation	0	0.0%	0	0.0%
Utility	0	0.0%	0	0.0%
Total	**47,725**		**59**	

2016 default and distressed exchanges by industry

Industry	Amt affected ($mn)		No. of actions	
Automotive	400	0.6%	1	1.2%
Chemicals	448	0.7%	1	1.2%
Consumer	331	0.5%	1	1.2%
Diversified	383	0.6%	2	2.3%
Energy	**45,907**	**69.4%**	**52**	**60.5%**
Financial	1,793	2.7%	4	4.7%
Food	144	0.2%	1	1.2%
Gaming	295	0.4%	1	1.2%
Healthcare	361	0.5%	1	1.2%
Housing	0	0.0%	0	0.0%
Industrials	355	0.5%	1	1.2%
Metals and Mining	8,675	13.1%	7	8.1%
Paper & Packaging	2,712	4.1%	2	2.3%
Retail	1,620	2.4%	6	7.0%
Services	1,000	1.5%	2	2.3%
Technology	767	1.2%	1	1.2%
Telecommunications	141	0.2%	1	1.2%
Transportation	225	0.3%	1	1.2%
Utility	594	0.9%	1	1.2%
Total	**66,150**		**86**	

Sources: Haynes & Boone Bankruptcy Tracker as of 10/25/16; Morgan Markets as of 12/6/16

Oil & gas restructuring processes continue on…

General takeaways

E&P	**"Minimal losses of principal expected"**
Midstream	**"Limited restructurings; Uncertainty about MLP structures"**
Oilfield Services	**"Rough road ahead; Jury still out"**

2016 – Balancing act for large energy banks

Distressed Credits

- Chapter 11 filings / restructurings
- Distressed debt exchanges
- Revised OCC guidance
- Bank loan loss reserves
- Post-restructuring credit facilities

Well Capitalized Existing Credits

- Decisively raised capital when available
- Non-core asset sales
- Generally operating in more attractive basins
- Evaluating opportunistic acquisitions

New Transactions

- Driven by private equity-backed E&Ps
- Conservative capital structures
- Free cash flow positive drilling plan
- Significant upfront, multi-year hedging
- Moderate transaction sizes executed to date
- Improving bank market capacity for larger transactions if well structured

Seasonal changes in Borrowing Bases…

Lenders

Spring 2016

- Significant stress hits balances sheets (loan losses spike)
- Lending price decks revised downward for new reality
- Most banks in pause or ‘reduce exposure’ mode
- Confusion over revised OCC guidelines
- Borrowing base significantly affected
  - **63% decreased**
  - 23% reaffirmed
  - 14% increased

Fall 2016

- New private equity-backed deals
- OCC clarity
- Moderate increase in lender appetite
- Hedging activity picks up
- Improved market for borrowing base redeterminations
  - **44% reaffirmed**
  - 28% increased
  - 28% decreased

Borrowers

Spring 2016

- Structural amendments
- Higher pricing
- Hedge protection rolling off

Fall 2016

- Borrowing base redeterminations stabilize
- Assets are trading – increased M&A
- Significant acquisition hedging
- Institutional investor appetite rebounds

Recently revised OCC Oil & Gas Handbook potential impact to borrowers

***"The tougher standards will require greater scrutiny and analysis by bankers and their credit officers"* – Haynes & Boone LLC**

2015 SNC Annual Review Summary

- Following the 2015 annual review by the Shared National Credit Program ("SNC"), the Agencies (FDIC & OCC) reported a high level of credit risk and increased weakness in oil & gas loans:
  - "Aggressive acquisition and exploration strategies from 2010 through 2014 led to increases in leverage, making many borrowers more susceptible to a protracted decline in commodity prices. …Classified commitments - a credit rated as substandard, doubtful, or loss - among oil and gas borrowers totaled $34.2 billion, or 15 percent, of total classified commitments, compared with $6.9 billion, or 3.6 percent, in 2014."

OCC Credit Assessment Standards

- New assessment ratings standards include the analysis of:
  - The borrower's ability to repay secured debt with considerations for total debt repayment within Reserve Life
  - Total funded debt / EBITDAX leverage ratios
  - Total funded debt / capital
  - Total committed debt / total proved future net revenue (unrisked and undiscounted; current NYMEX prices)

Industry Impact

- "Because the new guidelines represent a course change for evaluating energy banks' portfolios, the impact of the new guidelines could be more like a tsunami than a ripple." – Haynes & Boone LLC
- E&P companies have experienced more difficulty obtaining bank financing or amendments, waivers, or extensions
- Loans with lower credit ratings increase the loss reserves banks must set aside, increasing the costs to carry an adversely rated loan on its books
- At a time when producers are in need of flexibility from their lenders, possible solutions are more limited

Sources: OCC Handbook March 2016 & Haynes & Boone LLC's "New OCC Oil and Gas Loan Review Guidelines" published March 28, 2016

Effect on oil & gas borrowers from new guidelines

"Regulatory pressure could force [banks] to tighten the purse strings [on energy companies]" - WSJ

Capital Appetite

- Regulatory focus on leveraged loans increases banks' loan loss reserves
- Limited appetite for additional exposure

Bank Flexibility

- Banks re-rating portfolios given regulatory guidance and commodity prices
- Focus on structures and free cash flow
- Risk appetite for commodity hedging exposure impacted

Credit Metrics

- Focus shifts from collateral coverage to free cash flow
- Emphasis on maintenance "replacement" CAPEX
  - Lower maintenance capital results in more liquidity for CAPEX to hold or grow production, or to repay debt, etc.

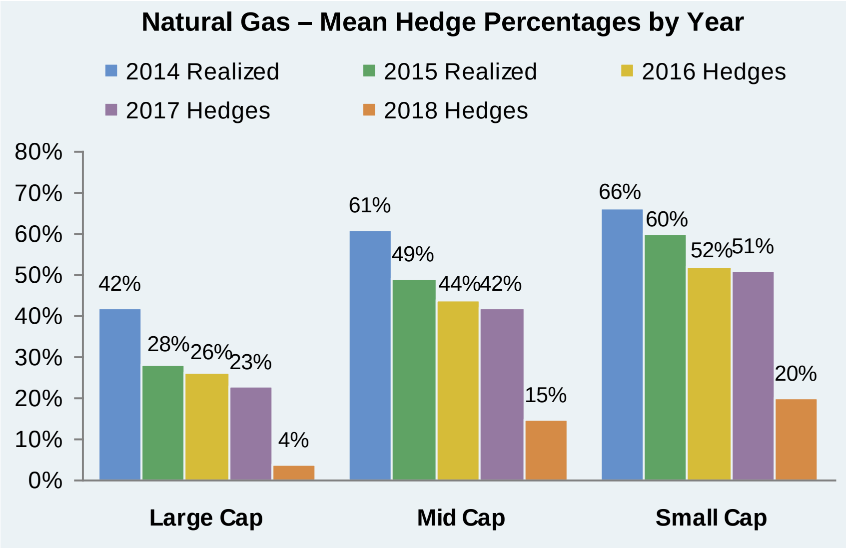
Costs

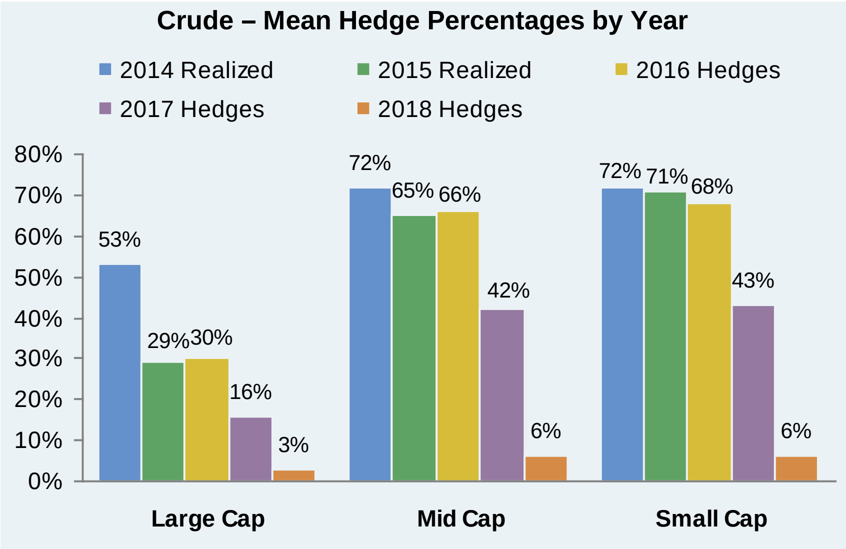
- Given the banks' requirement to hold more capital, energy companies have experienced the following:
  - Increasing borrowing costs
  - Tightened credit structures
  - Stricter hedging requirements

"The effects… can cascade through companies' capital structures and require them to look elsewhere for [capital]" – WSJ

Snapshot of E&P hedging position by market capitalization as of 3Q16

2014 - 2018 Natural Gas and Crude Hedge Ratios – Mean and Median





Summary

	2014 Realized		2015 Realized		2016		2017		2018	
	% Gas Hedged	% Oil Hedged	% Gas Hedged	% Oil Hedged	% Gas Hedged	% Oil Hedged	% Gas Hedged	% Oil Hedged	% Gas Hedged	% Oil Hedged
Large Cap Median	34%	65%	25%	22%	20%	26%	26%	9%	1%	0%
Large Cap Mean	42%	53%	28%	29%	26%	30%	23%	16%	4%	3%
Mid Cap Median	76%	81%	50%	68%	51%	65%	49%	49%	4%	0%
Mid Cap Mean	61%	72%	49%	65%	44%	66%	42%	42%	15%	6%
Small Cap Median	71%	79%	68%	75%	52%	70%	51%	40%	0%	0%
Small Cap Mean	66%	72%	60%	71%	52%	68%	51%	43%	20%	6%

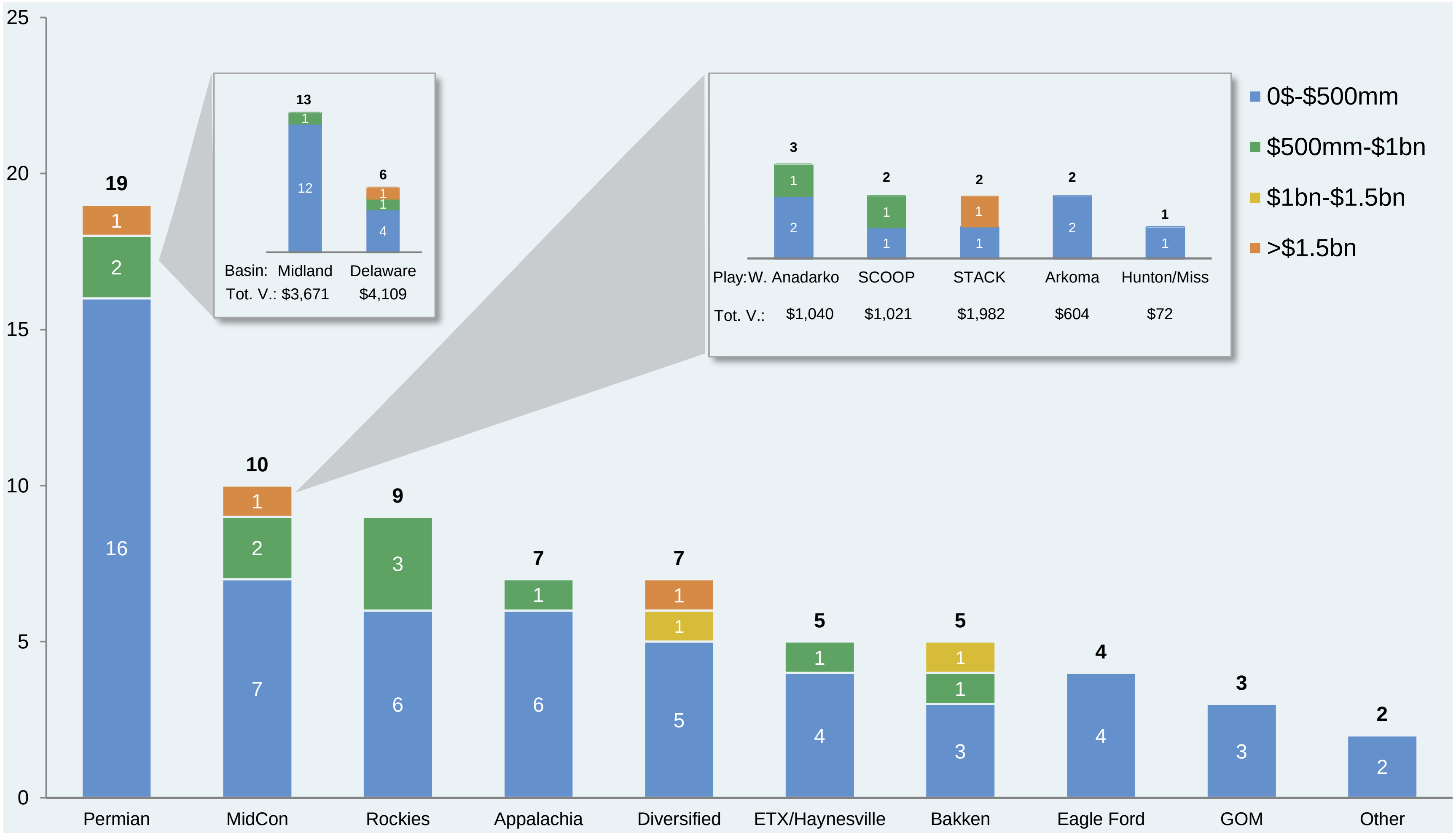
Source: Company reports and J.P. Morgan estimates as published by J.P. Morgan North America Equity Research OR as estimated by J.P.Morgan Global Commodities Group when research model is unavailable; Companies with less than 5% oil or gas production are not included in calculated median for respective commodity.

J.P.Morgan

Agenda

2015: U.S. upstream M&A market led by Permian and SCOOP / STACK…

Number of transactions in 2015 (>$50mm)

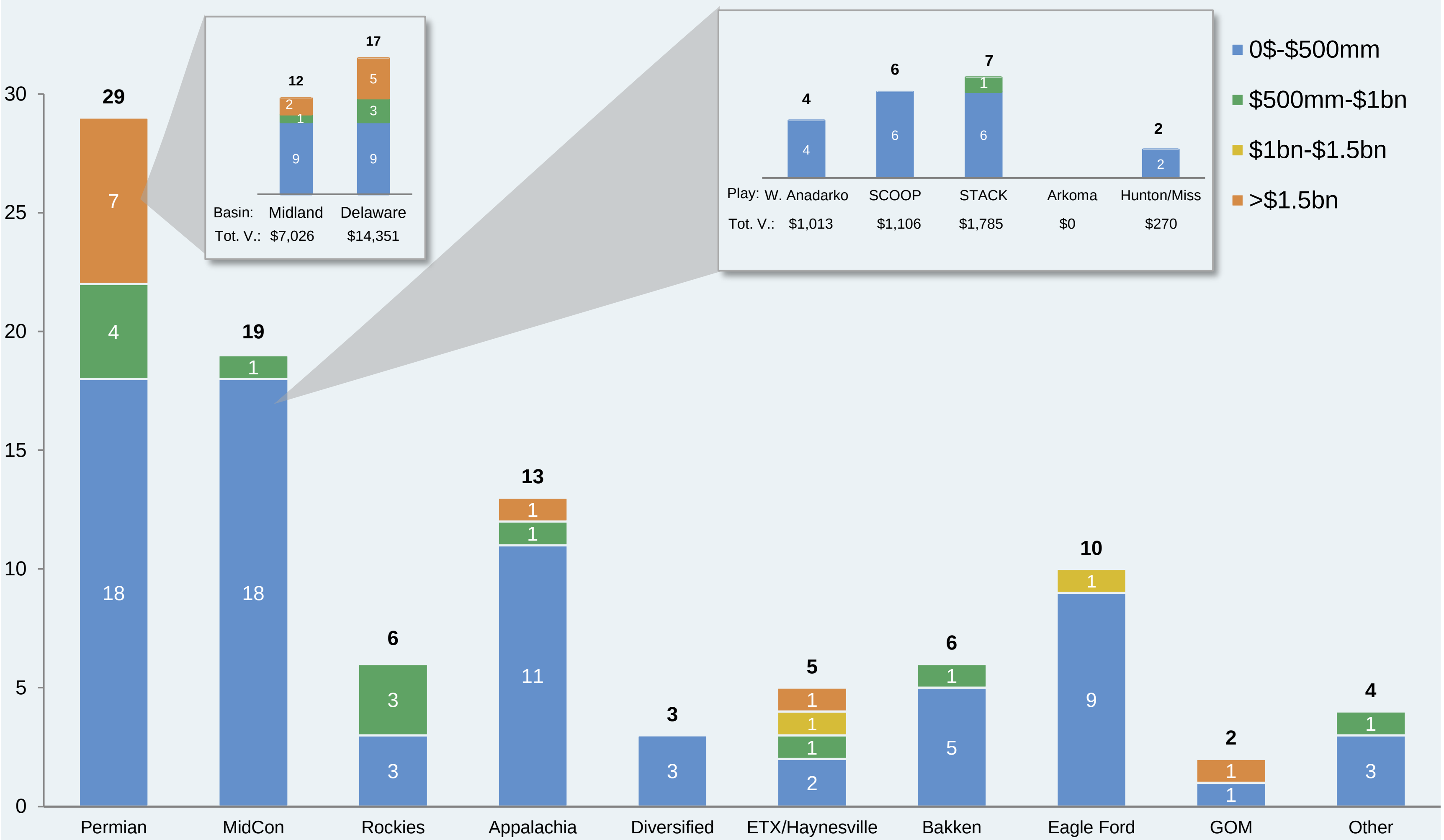


Total transaction value ($bn)									
$7,780	$4,718	$3,154	$1,957	$5,533	$1,852	$2,614	$436	$598	$318

Source: IHS Herold, PLS as of 11/28/16

2016 YTD: Permian dominance accelerates

Number of transactions 2016 YTD (>$50mm)



Total transaction value ($bn)

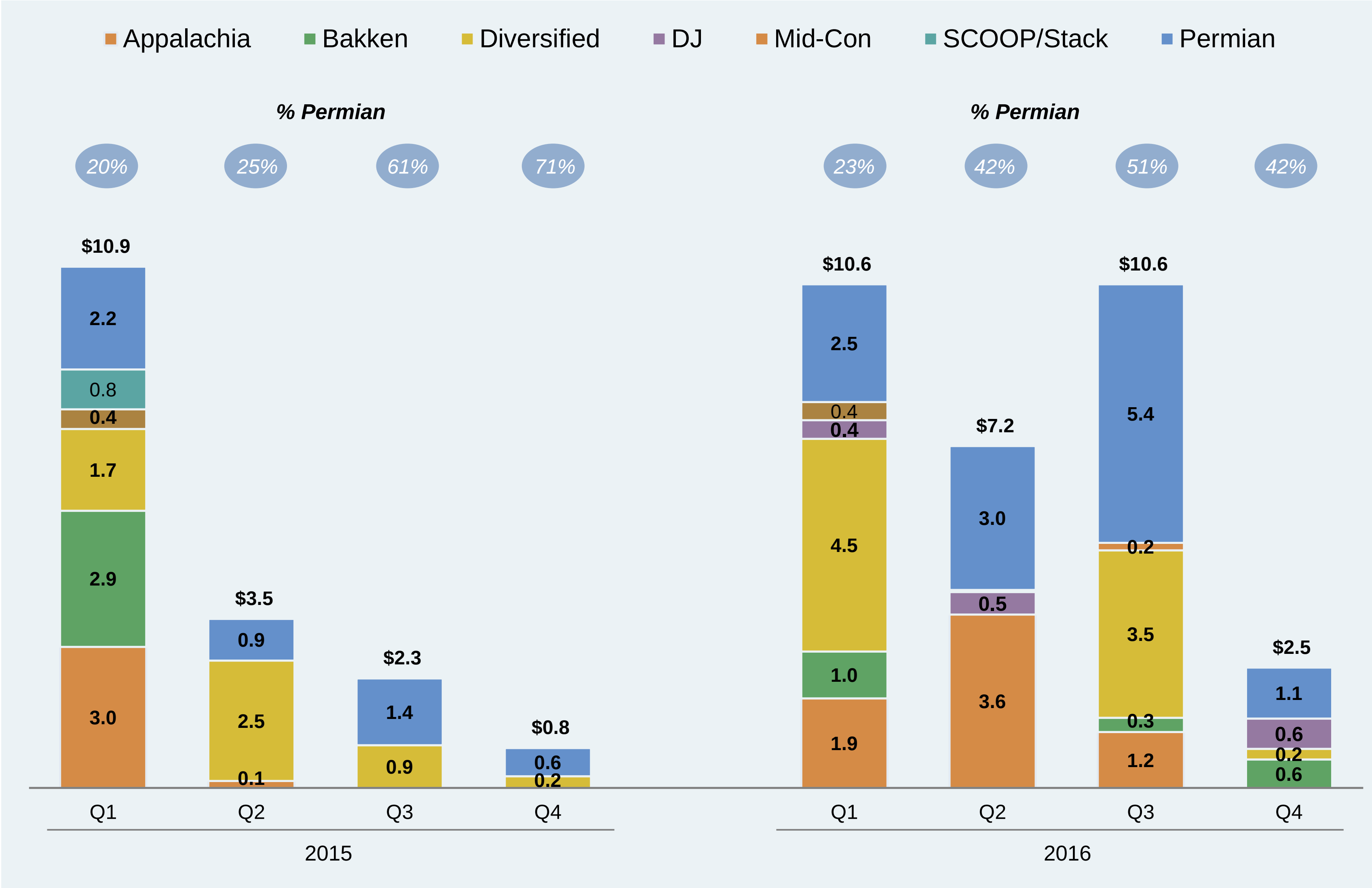
$21,377	$4,174	$2,113	$5,003	$678	$6,198	$1,321	$3,157	$2,425	$1,642

Source: IHS Herold, PLS as of 11/28/16

Permian continues to dominate the equity market, but other basins are gaining traction

E&P equity/equity-linked capital raised ($bn)

E&P equity/equity-linked offerings 2016YTD



Source: Dealogic, Factset as at 11/22/16. Note: excludes MLP issuance

J.P.Morgan

Agenda

Tighter markets ahead! Price outlook supported by OPEC deal. End-'16 Brent at $54/bbl, end-'17 at $60/bbl. WTI end'17 at $58/bbl

J.P. Morgan crude oil price forecast ($/bbl)

	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Brent - average				50.00	44.81	52.00	54.00	57.00	60.00	55.75
Brent - end of period	39.60	49.60	50.00	54.00	54.00	53.50	56.00	60.00	60.00	60.00
Brent Actual To Date	35.21	47.03	46.99	49.17	...	...	...	...	...	...
WTI - average				48.00	43.05	50.00	52.00	55.00	58.00	53.75
WTI - end of period	38.34	48.33	49.00	54.00	54.00	51.50	54.00	58.00	58.00	58.00
WTI Actual To Date	33.63	45.64	44.94	47.83	...		...	...	...	...

Source: ICE, NYMEX, Bloomberg, J.P. Morgan Commodities Research.
Note: LT means long-term forecast. All Forecasts are period averages. Actual to date prices are as of November 30, 2016.

- OPEC implements more aggressive production cuts. Addition of non-OPEC producers to production initiative adds to upside risks
- Geopolitical instability increases in the key petroleum exporting countries
- Steeper-than-expected decline in mature oil fields
- Demand growth accelerates on lower prices pushing refinery margins higher

- OPEC fails to agree terms for its production initiative, Competition for market share resumes
- Macroeconomic growth shock results in much weaker demand growth
- US shale producers have reduced costs/improved well productivity to compete in a $40/bbl world. Technology/ productivity improvements exceed our assumptions.
- Uncompleted well inventory falls more rapidly than assumed, boosting US production

Q & A

J.P.Morgan